

U.S. Patent Application Serial No. **10/516,941**
Amendment filed December 11, 2009
Reply to OA dated August 24, 2009

REMARKS

Claims 1, 2, 6-16, 18 and 19 are pending in this application, with claims 9-15 withdrawn from consideration. Claim 6 is canceled without prejudice or disclaimer, claims 1, 2, 7, 8, 16, 18 and 19 are amended, and claims 20-23 are newly added herein. Upon entry of this amendment, claims 1, 2, 7-16, 18 and 19-23 will be pending, with claims 9-15 withdrawn from consideration. Entry of this amendment and reconsideration of the rejections are respectfully requested.

No new matter has been introduced by this Amendment. Support for the amendments is detailed below.

Summary of Interview conducted November 10, 2009

On November 10, 2009, Applicant's agent, Daniel Geselowitz, conducted a telephone interview with Examiner Stuart Hendrickson.

During the interview, the rejection under 35 U.S.C. 112, second paragraph, was discussed, and it was agreed that claim amendments could overcome this rejection.

The rejection under 35 U.S.C. 103(a) was also discussed, in particular, the meaning of the structural limitations of claim 1, including the definition of the term "canister." During the interview, the Examiner indicated that:

1) he considered that in claim 1, the adsorbent could be within the shell of the microencapsulated phase-change material; and

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2) he considered the recitation of “being capable of adsorbing vehicle fuel vapor” to be only a description of the adsorbent itself. That is, the Examiner did not consider this to be a limitation on the access of fuel vapor to the adsorbent in the completed canister.

The Examiner appeared to indicate that clarifying the structure of the claimed composition and of the canister could distinguish the claim from Steelman as cited.

Claims 1, 2, 6-8, 16, 18 and 19 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which applicant regards as the invention. (Office paragraph p. 2)

Reconsideration of the rejection is respectfully requested in view of the amendments to the claims.

In the rejection, the Examiner states that the “canister case” is confusing, and the term “the micro pore” is without antecedent.

In the amendment to claim 1, lines 2-3 have been amended: “a case containing in which a latent-heat storage type adsorbent composition ~~for canisters is placed in a canister case.~~” This amendment replaces the term “canister case” with ~~case~~, for clarity.

In addition, the adsorbent is recited as “being in the form of granules or powder having pores.” Support for this amendment may be found at page 9, lines 9-11, and page 16, lines 24-25, of the specification. The phrase “the micro pore” is replaced by ~~the pores of the adsorbent~~, finding antecedent basis in this earlier recitation of “having pores.”

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The Examiner also asks: "Is average pore diameter meant?" Applicant submits that it can be understood from the Examples in the specification that the term "diameter" refers to the average pore diameter.

Claims 1, 2, 6-8, 16, 18 and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Steelman et al. 5,506,293 taken with Klett 6,673,328 and Klett 6,780,505.

(Office action p. 2)

Reconsideration of the rejection is respectfully requested in view of the amendments to the claims. Claim 1 has been amended to recite "wherein the heat-storage material is adhered to and/or deposited on the surface of the adsorbent." Support for this amendment may be found in claim 6, which has accordingly been canceled without prejudice or disclaimer. This limitation is also described in the specification at page 14, lines 5-6, and page 16, lines 19-21.

In addition, for clarity, the term "fuel vapor" is amended to –vehicle fuel vapor– in the claims. Support for this amendment may be found, for example, in the description on pages 1-3 of the specification, and at page 8, line 21.

Applicant submits that this amendment clarifies the structural difference between the present claims and the cited references. In particular, the Examiner cites column 3, line 20, of Steelman, which discloses: a) fiberballs, which can be made of carbon fibers; b) encapsulated phase changing material in the space separating the fibers of a fiberball, with the fiberball and the phase changing

material encapsulated by a shell (column 3, line 22); c) disposed in a resin matrix (column 3, line 25). See also the corresponding disclosure at column 8, line 14, and Fig. 3 of Steelman.

That is, the **shell** in Steelman's encapsulated material **surrounds both the fiberball and the phase-change material**. The Examiner agreed during the interview that this was the structure disclosed in Steelman. The present amendment to claim 1 clarifies that in the present invention, the microencapsulated phase-change material "is adhered to and/or deposited on the surface of the adsorbent," and therefore, the shell of the microencapsulated phase-change material **cannot** surround the adsorbent. This structural limitation of claim 1 is completely inconsistent with the disclosure of Steelman.

The rejection is based on using the carbon of Klett '328 in the process of Steelman. However, the result of this combination of Steelman and Klett would have the encapsulation surrounding Klett's porous foam and the phase-change material, and this would also be inconsistent with the recitation of claim 1.

Applicant also notes that the Examiner states that "the sizes [of the pores] are considered to be obvious to provide a **heat sink**" This refers to the porous material in Klett's carbon foam. However, the pore size of a carbon foam that is going to be sealed in a resin (and used as a heat sink) would not be the same as the pore size in claim 1. The pores in Klett's carbon foam are from 90 to 200 μm , which is 10000 times larger than the pores in claim 1, and there is no basis for modifying these to be as small as in claim 1. The Examiner's argument is based on providing a heat sink for use in satellites, such a heat sink having a completely different structure and purpose than the

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canister for preventing vehicle fuel vaporization recited in claim 1. It is clear that optimization of the combination of the Examiner's proposed combination of Steelman and the Klett references would **not** yield the pore sizes recited in base claim 1.

Therefore, claims 1, 2, 7, 8, 16, 18 and 19, as amended, are not obvious over Steelman, Klett '328 and Klett '505, taken separately or in combination.

Regarding New Claims 20-23

Newly added claim 20 recites a canister for preventing vehicle fuel vaporization, including the limitations of claim 18 before the present amendment, amended for clarity. The recitation is similar to that of claim 1, but claim 20 lacks the recitation of "wherein the heat-storage material is adhered to and/or deposited on the surface of the adsorbent," added to claim 1 in the present amendment. Claim 20 includes the product-by-process limitation of claim 18, of "molding a heat-storage material to produce a molded article, and uniformly mixing the adsorbent and the molded article." Applicant submits that the structure inherent in this product-by-process limitation distinguishes claim 20 from the Steelman, Klett '328 and Klett '505 references. In particular, the uniform mixing of the adsorbent with a molded article of the heat-storage material cannot produce a product in which the microcapsule shell of the heat-storage material surrounds the adsorbent particles, and is therefore inconsistent with the structure in Steelman.

Support for new claims 21-23 may be found in claims 2, 7 and 8.

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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Petition for Extension of Time